**IT Applications Unit 3, AOS 1, Online Communities**

1. Complete the following, from pgs, 28- 32: **Transmission media**

**Networks are classified according to below and we will study the following:**

1. Network Categories: LAN, WAN
2. Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet
3. Network communication standards
4. Network hardware and software
5. **Transmission media**
6. Network security

**Transmission media**

**Physical Transmission**

**Twisted – pair cable**

1. What is twisted pair cable?

Most star networks use an unshielded twisted-pair cable in which there are eight wires twisted in four separate pairs, and then twisted as a group.

1. Why do new networks use CAT 5E or CAT 6 rather than CAT 3?

CAT 5E cable uses all four wire pairs and can support 1 GB transmission over short distances.

CAT 6 cabling has more stringent specifications regarding noise and offers super-fast broadband.

1. What are some disadvantages of CAT 5E and why is it used in so many installations?

It’s fast and CAT5E can run at CAT5 standards.

1. What type of networks is this cable largely used in?

It used in star networks.

**Coaxial Cable**

1. Describe the characteristics of this cable.

Coaxial cable contains only two wires. The inner wire is surrounded by insulation, and then by copper braid or sometimes aluminium, tin or lead foil, and finally another layer of protective insulation.

1. What network is it used in?

It used in bus network.

**Fibre-optic cable**

1. Describe the characteristics of this cable.

Fibre – optic cable consists of special glass or plastic strands that can transmit light pulses. The light is not susceptible to electromagnetic interference and so can reliably carry data for distances of up to two kilometres.

1. Why fibre-optic cable is often used to connect major switches inside buildings as well as between buildings.

Fibre – optic is fast and it can easily translated information between buildings.

1. What are the disadvantages of this cable?

It’s cost much more than other cables.

**Wireless Transmission,** p 30

**Radio Waves**

1. What is required for radio transmissions to occur?

Radio waves can be transmitted over long distances, such as between cities, or over short distances, such as within a building.

1. Wi-Fi networks use radio waves. What are its advantages over a cable network and what are its disadvantages?

Wi –Fi network, as discussed earlier in this chapter, use radio waves to transmit signals.

1. Describe the characteristics of Bluetooth.

Bluetooth is a standard that uses short – range radio waves to transmit data over a distance of up to 10 metres.

**Microwaves**

1. Describe the characteristics of microwave transmission.
2. What are the limitations of microwave transmission?

**Satellite**

1. Satellite transmission can be in what forms?

Satellite transmission can be in the form of radio waves or microwaves.

1. What are the limitations of this form of transmission?

The biggest limitation to this form of transmission is the distance the waves have to travel to the satellite and back to the Earth station.

1. Who might use this form of transmission?

Such as big organisation.

**Infra-red**

1. Describe the characteristics of infra-red transmission.

Infra-red transmission uses the same technology as the TV and video remote controls. It is usually quite effective over short distances, although the data transfer rate is slow compared to using cables.

1. Why is radio wireless networking preferable to infra-red wireless networking?

The radio networking is more faster and stable than infra-red.